WE CLAIM:

1. A communications system for providing wireless Internet signals to a group of mobile subscribers, comprising:

a distribution hub for receiving Internet signals for a plurality of subscribers from the Internet, and a plurality of video signals from a source, and transmitting the Internet and video signals over a wired cable TV plant;

a plurality of antenna nodes coupled to the distribution hub by the cable plant, each of the antenna nodes including a cable plant interface adapted to receive the Internet signals via the cable plant, and a multi-carrier modulator adapted to modulate the Internet signals onto multiple carriers for wireless transmission to the plurality of subscribers.

2. A communications system according to claim 1 wherein the multi-carrier modulator includes an orthogonal frequency division multiplexer, the multi-carrier modulated Internet signals being orthogonal frequency division multiplexed (OFDM) signals.

3. A communications system according to claim 2 wherein the Internet signals transmitted over the wired cable plant are QAM modulated signals placed on RF carrier frequencies falling substantially within the 50-750 MHz range.

4. A communications system according to claim 3 wherein the OFDM symbols are modulated onto RF carrier frequencies falling substantially within the 2500 - 2700 MHz range.

5. A communications system according to claim 2 wherein at least some of the antenna nodes are configured to transmit the same signals at the same time on the same frequencies in overlapping coverage areas.

6. A communications system according to claim 1 wherein the antenna nodes are configured to receive wireless signals from a plurality of subscribers and relay the subscriber signals over the cable plant to the distribution hub, the distribution hub being

configured to receive the subscriber signals from the cable plant and transmit them to the Internet.

7. A communications system according to claim 1 wherein the wired cable plant includes a coaxial cable portion.

8. A communications system according to claim 7 wherein the antenna nodes are connected to the coaxial cable portion.

9. A communications system according to claim 1 including a plurality of cable plant to wireless transverters coupled to the distribution hub by the cable plant, each of the wireless transverters being configured to receive video signals from the cable plant and convert the received video signals into multi-carrier modulated signals for wireless transmission to subscribers.

10. A communications system for broadcasting television signals to a group of mobile subscribers, comprising:

a distribution hub configured to receive television signals from a network and transmit the subscriber signals over a cable plant;

a cable plant connected to the distribution hub for transmitting the television signals from the distribution hub to a plurality of remote locations, the cable plant including at least one coaxial cable network;

a plurality of cable/wireless television transverters connected at remote locations to the coaxial cable network, the transverters being configured to receive television signals transmitted over the cable plant from the distribution hub, convert the television signals into a format suitable for wireless transmission, and transmit the converted television signals over wireless paths to a plurality of mobile subscribers units; and

a plurality of mobile subscriber units configured to receive the converted television signals.

11. A communications system according to claim 10 wherein the converted television signals include OFDM television signals.

12. A communications system according to claim 11 wherein at least some of the plurality of transverters broadcast the same signals at the same time on the same frequencies in overlapping coverage areas.

13. A communications system according to claim 10 wherein the converted television signals include 8-VSB television signals.

14. A communications system for providing wireless signals from a wide area network to a group of mobile subscribers, comprising:

(a) a distribution hub for (i) receiving, from the wide area network, downstream IP signals for a plurality of mobile subscriber units located within a service area and broadcasting the downstream IP signals in a downstream channel over a wired cable TV plant, and (ii) receiving over the wired cable TV plant, from a plurality of antenna nodes, upstream IP signals and routing the upstream IP signals to the wide area network;

(b) a plurality of antenna nodes located in the service area and coupled to the distribution hub by the cable plant for (i) receiving the downstream IP signals from the wired cable TV plant, converting the downstream IP signals into a format suitable for wireless transmission and transmitting the converted downstream IP signals over-the-air to the mobile subscriber units, at least some of the antenna nodes acting in simulcast manner; and (ii) receiving upstream IP signals over-the-air from the mobile subscriber units, converting the upstream IP signals into a format suitable for transmission over the cable TV plant and transmitting the upstream IP signals over the cable TV plant to the distribution hub; and

(c) a plurality of mobile subscriber units each having a wireless receiver for receiving over-the-air downstream IP signals transmitted from the antenna nodes and a wireless transmitter for transmitting upstream IP signals to the antenna nodes.

15. The communications system of claim 14 wherein the converted downstream IP signals are OFDM signals.

16. The communications system of claim 15 wherein the downstream IP signals broadcast over the cable TV plant are QAM modulated signals placed on an RF carrier frequency falling substantially within the 2500-2700 MHz range.

17. The communications system of claim 14 wherein the cable TV plant includes a coaxial cable portion to which at least some of the antenna nodes are connected.

18. The communications system of claim 14 including a plurality of said distribution hubs, each having associated therewith a service area and a plurality of antenna nodes for transmitting downstream IP signals to and receiving upstream IP signals from mobile subscriber units located within the service area, the communications system further including a headend coupled to said distribution hubs for routing downstream IP signals from the wide area network to the distributions hubs, the headend including a router and a network management system configured to receive information from the distribution hubs about the location of mobile subscriber units and to route downstream IP signals addressed to a particular mobile subscriber unit to the distribution hub associated with the service area in which the particular mobile subscriber unit is located.

19. A method for providing wireless Internet signals to a group of mobile subscriber units, comprising:

(a) providing downstream Internet signals addressed for a plurality of mobile subscribers units to a distribution hub;

(b) formatting the Internet signals into a transmission format suitable for transmission over a wired cable television network and transmitting the formatted Internet signals over the cable television network to a plurality of antenna nodes connected throughout the wired cable television network; and

(c) at the antenna nodes, converting the formatted Internet signals into multi-carrier modulated signals and transmitting the multi-carrier modulated signals over-the- air to the plurality of subscriber units.

20. The method of claim 19 including:

(d) at each subscriber unit, demodulating the multi-carrier modulated signals and outputting the Internet signals addressed to that subscriber unit.

21. The method of claim 20 including transmitting uplink Internet signals from the subscriber units to the distribution hub for routing to the Internet.

22. The method of claim 19 wherein the multi-carrier modulated signals are OFDM signals.

23. The method of claim 22 wherein the formatted Internet signals are QAM modulated signals placed on RF carrier frequencies falling substantially within the 50-750 MHz range and the OFDM signals are modulated onto RF carrier frequencies falling substantially within the 2500-2700 MHz range.

24. The method of claim 22 wherein at least some of the antenna nodes broadcast the same OFDM signals at the same time on the same frequencies in overlapping coverage areas.